

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A multiphase, composite material comprising:
a first, active, phase comprising an amorphous, electrochemically active material; and
a second, stabilizer, phase comprising a material selected from the group consisting of:
metals, carbon, ceramics, intermetallic compounds, and combinations thereof, said stabilizer
phase being configured as a plurality of spaced-apart regions having said active phase disposed
therebetween, said spaced apart regions of said stabilizer phase having a size in the range of 10-
100 nanometers.

2. (Original) The material of claim 1, wherein said active phase comprises, on a
weight basis, 30-60% of said material.

3. (Original) The material of claim 1, wherein said active phase comprises a
material selected from the group consisting of: Sn, Sb, Bi, Pb, Ag, In, Si, Ge, Al, and
combinations thereof.

4. (Original) The material of claim 1, wherein said active phase includes a member
selected from the group consisting of: Sn, Si, Al, and combinations thereof.

5. (Original) The material of claim 3, wherein said active phase includes nanophase
domains of said electrochemically active material therein.

6. (Original) The material of claim 5, wherein said nanophase domains have a size in the range of 10-30 nanometers.

7. (Original) The material of claim 5, wherein said nanophase domains comprise tin.

8. (Original) The material of claim 1, wherein said stabilizer phase includes at least one element selected from the group consisting of: Fe, Zr, Ti, and C.

9. (Original) The material of claim 1, wherein said stabilizer phase comprises a member selected from the group consisting of: metal nitrides, metal carbides, metal oxynitrides, metal oxycarbides, and combinations thereof.

10. (Canceled)

11. (Original) The material of claim 1, wherein said stabilizer phase comprises an amorphous material.

12. (Original) The material of claim 1, wherein said stabilizer phase comprises a crystalline material.

13. (Original) The material of claim 1, wherein said stabilizer phase is electrochemically inactive.

14. (Original) The material of claim 1, wherein said stabilizer phase is electrochemically active.

15. (Original) The material of claim 1, wherein said stabilizer phase comprises an iron-tin material.

16. (Original) The material of claim 1, wherein said stabilizer phase comprises FeSn_2 .

17. (Original) The material of claim 1, wherein said material is prepared by a mechanical alloying process.

18. (Original) The material of claim 17, wherein said mechanical alloying process is a ball milling process.

19. (Original) The material of claim 17, wherein said mechanical alloying process is an attritor milling process.

20. (Original) The material of claim 17, wherein said mechanical alloying process is a grinding process.

21. (Currently Amended) An electrode comprising:
a multiphase composite material, said multiphase composite material comprising: a first, active, phase comprising an amorphous, electrochemically active material; and a second, stabilizer, phase comprising a material selected from the group consisting of: metals, carbon, ceramics, intermetallic compounds, and combinations thereof, said stabilizer phase being configured as a plurality of spaced apart regions having said active phase disposed therebetween, said spaced apart regions of said stabilizer phase having a size in the range of 10-100 nanometers.

22. (Original) The electrode of claim 21, wherein said active phase comprises a material selected from the group consisting of: Sn, Sb, Bi, Pb, Ag, In, Si, Ge, Al, and combinations thereof.

23. (Original) The electrode of claim 21, wherein said stabilizer phase includes at least one element selected from the group consisting of: Fe, Zr, Ti, and C.

24. (Original) The electrode of claim 21, wherein said stabilizer phase comprises a member selected from the group consisting of: metal nitrides, metal carbides, metal oxynitrides, metal oxycarbides, and combinations thereof.

25. (Canceled)

26. (Currently Amended) A method of making a multiphase composite material, said method comprising the steps of:

providing a plurality of components, said components including the elements of which said multiphase composite material is comprised; and

subjecting said plurality of components to a mechanical alloying process wherein said mechanical alloying process comprises a staged process wherein a first portion of said plurality of components are subjected to a first mechanical alloying process so as to produce a first component of said multiphase composite material, and a second portion of said components are subsequently subjected to a second mechanical alloying process with said first component; whereby said multiphase composite material is formed.

Claims 27-30 (Canceled)

31. (New) A method of making a multiphase composite material, said method comprising the steps of:

providing a plurality of components, said components including the elements of which said multiphase composite material is comprised; and

subjecting said plurality of components to a mechanical alloying process which is a substitutional process wherein, in a first step, a first composition which includes a first and second element of said multiphase composite material is subjected to a mechanical alloying process along with a third composition which is comprised of a third element and a fourth element of said multiphase composite material, wherein said third element displaces said second

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element from said first composition so as to form a second composition which includes said first and third element.